

# STATE OF LOUISIANA



## DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT



## HIGHWAY TRAFFIC NOISE POLICY

March 2004

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**Purpose:** The purpose of this directive is to establish policy and procedures for noise studies and abatement measures to help protect the public health and welfare, to supply criteria for the identification of highway traffic noise impacts, and to provide local officials with information for use in the planning development adjacent to highways.

**Scope:** This directive applies to the development of Federal-Aid projects approved in accordance with Title 23, United States Code (U.S.C.) or as otherwise directed by DOTD. It also applies to the construction of new control of access facilities funded solely by DOTD or an authority of DOTD.

**Policy:** It will be the policy of DOTD that highway traffic noise prediction requirements, noise analyses, noise abatement criteria, and requirements for informing local officials in this directive comply with the noise standards mandated by 23 U.S.C. 109(i) and consistent with procedural requirements codified by 23 C.F.R. 772.

**Definitions:**

*Benefited Receptor* - a sensitive receptor, whether impacted or not, receiving 5 dBA or more reduction in the noise level as a result of the proposed abatement.

*Design Year* - the future year used to estimate the probable traffic volume for which a highway is designed. The design year will normally be 20 years from the start of project construction.

*Existing Noise Levels* - the noise, resulting from the natural and mechanical sources and human activity, usually present in a particular area. In noise studies, this will be the level predicted to occur in the year of initial project construction.

*Leq* - the equivalent steady-state sound level which in a stated period of time contains the same acoustic energy as a time-varying sound level during the same period.

*Leq(h)* - the hourly value of Leq.

*Sensitive Receptor* - One of the types of examples contained in The "Description of Activity Category" column shown in Table 1.

*Traffic Noise Impacts* - impacts which occur when the predicted traffic noise levels equal or exceed the DOTD Noise Abatement Criteria (see Table 1), or when the predicted traffic noise levels exceed the existing noise levels by 10 dBA.



*Type I Project* – a proposed Federal or Federal-aid highway project for the construction of a highway on new location or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment or increases the number of through-travel lanes. For State-funded only projects, a Type I project is defined as a new control of access highway.

*Type II Project* – a proposed project to provide noise abatement on an existing highway, regardless of funding.

**Applicability:** This directive applies to all Type I projects. DOTD will not consider nor implement Type II projects.

**Table 1 – DOTD Noise Abatement Criteria\***  
**Hourly A-weighted Sound Level – decibels (dBA)**

Activity Category	Leq (h)	Description of Activity Category
A	56 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	66 (Exterior)	Picnic areas, recreational areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries and hospitals.
C	71 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	-----	Undeveloped lands.
E	51 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals and auditoriums.

\* These criteria are consistent with the FHWA Noise Abatement Criteria (23 C.F.R 772) allowing for consideration of traffic noise impacts 1 dBA below the FHWA criteria.

**Analysis of Traffic Noise Impacts and Abatement Measures:** DOTD will determine and analyze expected traffic noise impacts and alternative noise abatement measures (see list of abatement measures beginning on page 6) to mitigate these impacts, giving weight to the benefits and cost of abatement, and to the overall social, economic and environmental impacts.

The traffic noise analysis will include the following for each alternative under detailed study:

- a. Identification of existing activities, developed lands, and undeveloped lands for which development is planned, designed and programmed, which may be affected by noise from the highway (Development will be deemed to be planned, designed and programmed if a noise-sensitive land, such as a residence, school, church, hospital, or library, has been issued a building permit from the local agency with jurisdiction at the time of the highway traffic noise analysis);
- b. Determination of existing noise levels;
- c. Prediction of traffic noise levels;
- d. Determination of traffic noise impacts; and
- e. Examination and evaluation of alternative noise abatement measures for reducing or eliminating the noise impacts.

**Determination of Existing Noise Levels:** The determination of existing noise levels will be made utilizing field measurements of actual noise levels. A log will be kept noting the time of day, meteorological conditions, calibration results, and any unusual ambient noise sources experienced during each measurement.

Noise measurements will be taken utilizing ANSI Type 1 or Type 2 Sound Level Meters used in accordance with the manufacturer's operations manual. Meters are to be calibrated before and after each measurement. Meters should have valid factory calibration certification.

Noise measurements will be taken in time intervals no shorter than 15 minutes and no longer than one hour unless alternate intervals are given prior approval by DOTD.

Actual traffic counts will be made during each field measurement. These traffic counts will be categorized according to the following vehicle classes:

*Automobiles (A)* – all vehicles with two axles and four wheels designed primarily for transportation of nine or less passengers or transportation of cargo.

*Medium Trucks (MT)* – all vehicles with two axles and six wheels designed for the transportation of cargo.



*Heavy Trucks (HT)* – all vehicles having three or more axles designed for the transportation of cargo.

*Buses (B)* – all vehicles designed to carry more than nine passengers.

*Motorcycles (M)* – all vehicles with two or three wheels and an open-air driver/passenger compartment.

Sites selected for field measurements will receive prior approval of DOTD. These sites will represent noise sensitive receptors in each Activity Category which are likely to be affected by the project. Sites outside of the immediate vicinity of the project may also be chosen to determine the ambient noise levels unaffected by the roadway. Unless specifically approved by DOTD, field measurements will be taken to represent exterior activities only.

Field measurements will be taken at approved sites at peak and off-peak times. Peak hour noise levels will be the hour with the highest noise levels, not necessarily the hour with the highest traffic volumes.

Field noise studies will be as required to determine the peak hour Leq. The measurement of other noise descriptors will only be made with prior approval of DOTD.

Upon the consent of the Environmental Engineer Administrator, existing noise levels may be determined by utilizing other methodology, including computer models consistent with the current FHWA highway traffic noise prediction model. Traffic characteristics, data, selection of receptor locations, and other input parameters utilized will be at the discretion of DOTD.

**Prediction of Traffic Noise Levels:** Any traffic noise prediction methodology is approved for use in any traffic noise analysis required by this policy if the methodology used at the time the noise study is performed is consistent with the FHWA highway traffic noise prediction model in effect at the time of the analysis and the prediction method uses current FHWA reference energy mean emission levels or such levels as measured by current FHWA measurement procedures.

In predicting noise levels and assessing noise impacts, traffic characteristics that will yield the worst hourly traffic noise impact on a regular basis for the design year will be used. The period with the highest sound levels may not be at the peak traffic hour but instead, during some period when traffic volumes are lower but the truck mix or vehicle speeds are higher.

Future noise levels will be based on modeling results utilizing data for the design year. This data, including traffic volumes, composition and speed, other reasonably foreseeable development, and the implementation of other transportation projects, will be based on accepted engineering practice and local planning assumptions.

**Identification of Traffic Noise Impacts:** Traffic noise impacts occur when the DOTD Noise Abatement Criteria (Table 1) are equaled or exceeded at any sensitive receptor under study, or the predicted noise levels exceed the existing noise levels at any sensitive receptor by 10 dBA.

**Noise Abatement:** In determining and abating traffic noise impacts, primary consideration is to be given to exterior areas. Abatement will usually be necessary only where frequent human use occurs and a lowered noise level would be of benefit.

In those situations where there are no exterior activities to be affected by the traffic noise, or where exterior activities are far from or physically shielded from the roadway in a manner that prevents an impact on exterior activities, the interior criterion may be used as the basis for determining noise impacts.

If a noise impact is identified, the abatement measures listed herein must be considered. When noise abatement measures are being considered, every effort will be made to obtain a substantial noise reduction of at least 8 dBA. At least one sensitive receptor must receive an 8 dBA reduction for the noise abatement system to be feasible.

Before adoption of a Final Environmental Impact Statement, Finding of No Significant Impact, or Categorical Exclusion, for Federal-aid projects, or final Scope and Budget Memorandum for 100% State-funded projects, the DOTD will identify noise abatement measures, including dimensions and locations if noise barriers are proposed, which are reasonable and feasible and will be incorporated in the project. The DOTD will also identify noise impacts for which no apparent solution is available.

The noise study report will document the results of the noise study. This report may be a stand alone document incorporated into the NEPA document by reference, or it may be included in the appendix of the NEPA document.

For Federal-aid projects, the date of adoption of the Record of Decision, Finding of No Significant Impact, or Categorical Exclusion will become the date of public knowledge. For 100% State-funded projects, the date of adoption of the final Scope and Budget Memorandum will become the date of public



knowledge. The date of public knowledge is the date at which the DOTD will no longer be responsible for providing noise abatement for new development which occurs adjacent to the proposed project. Provision of such abatement measures becomes the responsibility of the local communities or private developers.

The views of impacted residents will be a major consideration in reaching a decision on the reasonableness of abatement measures to be provided. When noise abatement measures are proposed for a project (only those measures deemed feasible and potentially reasonable will be proposed), proper public involvement procedures (i.e., Public Meetings or Public Hearing, etc.) will be implemented to ascertain the views of impacted residents in an initial determination of the reasonableness of noise abatement measures prior to finalization of the NEPA requirements. Public Involvement will be tailored to the project, and public concerns will be documented in the noise report.

In cases where FHWA does not approve the plans, specifications and estimates under its Stewardship Agreement with DOTD, DOTD will certify that noise abatement measures adopted in the Record of Decision, Finding of No Significant Impact, or Categorical Exclusion are included in the plans, specifications and estimates. This certification will be included in DOTD's submission to FHWA of the authorization and project agreement request.

Plans, specifications and estimates will not be approved by FHWA or DOTD unless provisions are made to provide the noise abatement measures in accordance with the approved environmental document.

The noise abatement measures listed below may be incorporated into Type I projects to reduce traffic noise impacts.

- (1) Traffic management measures (e.g., traffic control devices and signing for prohibition of certain vehicle types, time-use restrictions for certain vehicle types, modified speed limits and exclusive lane designations),
- (2) Alteration of horizontal and vertical alignments,
- (3) Acquisition of property rights (either in fee or lesser interest) for the construction of noise barriers,
- (4) Construction of noise barriers (including landscaping for aesthetic purposes) whether within or outside the highway right-of-way,



(5) Noise insulation of public use or nonprofit institutional structures (Noise insulation is normally limited to public use structures such as schools and hospitals), and

Use of pavement surfacing, which has documented noise abatement qualities, for noise abatement will only be used on State funded projects, and the decision to use pavement surfacing for noise abatement purposes will be made on a case by case basis.

There may be situations where severe traffic noise impacts (i.e., traffic noise levels 20 dBA greater than the DOTD Noise Abatement Criteria (see Table 1) or noise levels 30 dBA greater than the existing noise levels) exist or are expected and the abatement measures listed above are physically infeasible or economically unreasonable. In these instances, noise abatement measures other than those listed above may be proposed by DOTD and approved by FHWA on a case-by-case basis when preconditions for federal funding for noise abatement measures have been met, or by the Assistant Secretary, DOTD Office of Planning and Programming when State-funded only.

#### **Determination of Feasibility and Reasonableness:**

**Feasibility:** In determining the feasibility of providing noise abatement measures, DOTD will consider the engineering aspects of the project design features and abatement measures. Among those items to be considered are the following: overall barrier height, achieving the requisite insertion loss, drainage, safety, access, maintenance, etc. DOTD will incorporate design features that best accommodate noise abatement measures on Type I Projects where noise impacts occur.

In determining the feasibility of providing noise abatement measures, at least one receiver must receive a minimum of 8 dBA reduction. If no receivers receive this minimum noise reduction, the abatement measure is deemed not to provide substantial noise reductions and is not feasible.

**Reasonableness:** In determining the reasonableness of providing noise abatement measures, DOTD will balance the interests of the overall public good with the social, economic, and environmental impacts and the costs of the noise abatement measures. Additionally, on each project where noise impacts occur, DOTD will consider the following:

(1) The cost estimate of the noise abatement measure (including the costs of real estate acquisition, construction servitude or utility relocation) should be equal to or less than \$25,000 per benefited receptor.

(2) Feedback from the public involvement during the NEPA process to ascertain community desirability (views of impacted residents will be given major consideration),

(3) Amount of development which occurred before and after, as indicated by the date of plat approval, the initial highway construction,

(4) The age of development and the longevity of the noise impact from the highway,

(5) Effects on the natural and human environments,

(6) Extent of zoning changes in development toward a less sensitive land use (i.e., Activity Category - see Table 1.), and the effectiveness of land use controls implemented by local officials to prevent incompatible development,

(7) The effect that background or ambient noise may have on receptors,

(8) The noise contribution from other (non-highway) sources in the area, such as rail traffic, aircraft and watercraft, industrial equipment, etc.,

(9) The extent to which the predicted future build noise levels exceed the DOTD Noise Abatement Criteria (Table 1) for each applicable Activity Category,

(10) The extent to which the predicted future build noise levels exceed the existing noise levels, and

(11) The extent to which the predicted future build noise levels exceed the future no-build noise levels.

#### Additional Considerations:

There may be extenuating circumstances where unique or unusual conditions may warrant special consideration of highway traffic noise impacts and/or implementation of noise abatement measures. These circumstances could involve areas such as (1) those that are extremely noise sensitive, (2) those where severe traffic noise impacts are anticipated, or (3) those containing resources protected under 49 U.S.C. 303 (Section 4(f)). Such extenuating circumstances will be considered on an individual project basis.

In determining the number of residences impacted/protected, the number will include all dwelling units (i.e., owner-occupied, rental units, mobile homes, etc.).



In multistory buildings, primary consideration will be given to protection of exterior activities on the ground floor.

For Recreational Vehicle (RV) Parks, consideration will be given to protection of parks with a history of long-term residents or tenants (i.e., similar to that of a mobile home park).

**Information for Local Officials:** In an effort to prevent future traffic noise impacts on currently undeveloped lands, DOTD will inform local officials, within whose jurisdiction the highway project is located, of the best estimation of future noise levels for both developed and undeveloped lands or properties in the immediate vicinity of the project and information that may be useful to local communities to limit future land development to that which will be compatible with anticipated highway noise levels.

A copy of the environmental document (with included noise study) and/or noise study report (if one is prepared) will be provided to local officials upon approval of the Record of Decision, Finding of No Significant Impact, Categorical Exclusion or final Scope and Budget Memorandum.

Local officials or agencies, which may have jurisdiction and must be provided this information, include the Mayor's office, city/town/parish council, parish police jury, and metropolitan planning organization, as applicable.

**Construction Noise:** The following general steps are to be performed for all Type I projects:

- a. Identify land uses or activities that may be affected by noise from the construction of the project. The identification is to be performed during the project development studies.
- b. Determine the measures that are needed in the plans and specifications to minimize or eliminate adverse construction noise impacts to the community including alternate designs to keep noise levels to a minimum (e.g. the use of drilled shafts vs. driven piles in noise sensitive areas). This determination will include a weighing of benefits achieved and the overall adverse social, economic, and environmental effects and costs of abatement measures.
- c. Incorporate the needed abatement measures in the plans and specifications.

When practicable, DOTD will construct any permanent noise abatement measures as the first phase of a highway construction project to abate construction noise impacts of subsequent phases of the same project.

**Revision:** DOTD may revise this policy as necessary to keep current with the state-of-the-art technology, legislation, regulation, and guidance, as well as construction cost indices in the fields of highway traffic noise prediction, impact, and abatement.

Revisions to this policy affecting Federal or Federal-aid projects must be concurred with by the FHWA prior to adoption.

DOTD and FHWA are not responsible for notification of revisions to this policy. Inquiries as to the latest revision that may be applicable should be made in writing to:

Environmental Engineer Administrator  
Louisiana Department of Transportation and Development  
Post Office Box 94245  
Baton Rouge, Louisiana 70804-9245

**Implementation Plan:** This directive will become effective March 15, 2004. It will apply to all projects started on or after the above effective date, and to all projects currently being evaluated pursuant to NEPA that do not have a completed noise study. Unless otherwise stated in the environmental document, this directive does not apply to projects that have obtained final approval or approval for public distribution prior to the effective date (Categorical Exclusion, Environmental Assessment, Finding of No Significant Impact, Draft or Final Environmental Impact Statements, Record of Decisions, or Scope and Budget Memorandum).



# LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT HIGHWAY TRAFFIC NOISE ABATEMENT CONSIDERATIONS WORKSHEET

SPN:  
Barrier #:

FEASIBILITY CONSIDERATIONS		Not Likely Feasible	Less Likely Feasible	Feasible	More Feasible	Most Feasible
Barrier Height		> 29 ft	25-29 ft	17-24 ft	13-16 ft	10-12 ft
Achieve 8 dBA IL at One Receptor		None	At least one Receiver	At least one Receiver	At least one Receiver	At least one Receiver
Drainage		Cannot provide with barrier	Provided with frequent openings in barrier	Provided with few openings in barrier	Provided without openings in barrier	Provided without openings in barrier
Safety		Clear Zone unprotected		Outside or protected clear zone	Outside or protected clear zone	Outside or protected clear zone
Access		Needed but cannot be provided with barrier	Needed and can be provided with opening		Not needed or can be provided with overlap or door	Not needed or can be provided with overlap or door
Maintenance		Cannot be performed without tremendous expense, difficulty, or endangerment	Not easily accessible, to maintenance crew safety an issue	Accessible to maintenance crew, but may be difficult to maintain	Accessible and easy to maintain	Accessible and easy to maintain

REASONABLENESS CONSIDERATIONS		Not Likely Reasonable	Less Likely Reasonable	Reasonable	More Reasonable	Most Reasonable
Cost of Noise Abatement per Receptor Receiving 5 dBA Insertion Loss		> \$30,000	\$25,000-\$30,000	\$20,000-\$25,000	\$15,000-\$20,000	< \$15,000
Public Support: A. General Public B. Adjacent Owners		Strongly Opposed Strongly Opposed	Most Oppose Most Oppose	Average Support (50:50) Average Support (50:50)	Most Support Most Support	Strongly Support Strongly Support
Amount of Development Predating Original Highway Construction		< 25%	25% - 40%	40% - 60%	60% - 75%	> 75%
Longevity of Noise Impacts		< 5 years	5 - 10 years	10 - 15 years	15 - 20 years	> 20 years
Effect on Natural/Human Environment		Detriment	Adverse	Moderate	Tangible Impact	Negligible
Zoning Changes Towards Less Sensitive Land Use within 300' of ROW		< 50% Category B	50 - 60% Category B	60 - 70% Category B	70 - 80% Category B	> 80% Category B
Ambient Noise		Ambient is 0-5 dBA < Hwy or Ambient > Hwy	Ambient is 7-14 dBA < Hwy	Ambient is 15 dBA < Highway	Ambient is 15 dBA < Highway	Ambient is 15 dBA < Highway
Other Noise Sources: A. B. C.		Major Airport < 1 mile Rail Trunk Line < 100 feet Arterial Highway < 200 feet	Major Airport 1- 2 miles Rail Trunk Line 100 - 200 feet Arterial Highway 200-300 feet	Major Airport 2-3 miles Rail Trunk Line 200-300 feet Arterial Highway 300-400 feet	Major Airport 3-4 miles Rail Trunk Line 300-400 feet Arterial Highway 400-500 feet	Major Airport > 4 miles Rail Trunk Line > 400 feet Arterial Highway > 500 feet
Future Build - DOTD NAC		< 3 dBA	+3-5 dBA	+5-8 dBA	+8-10 dBA	> +10 dBA
Future Build - Existing		< 3 dBA	+3-5 dBA	+5-8 dBA	+8-10 dBA	> +10 dBA
Future Build - Future No-build		< 3 dBA	+3-5 dBA	+5-8 dBA	+8-10 dBA	> +10 dBA

**Louisiana Department of Transportation and Development  
Highway Traffic Noise Abatement Considerations Worksheet  
March 2004**

**Feasibility Considerations**

**A. Barrier Height**

This criterion takes into consideration the overall height of a noise barrier. To compute this value, take the average height of the particular barrier system under consideration.

**B. Achieve 8 dBA Insertion Loss at One Receptor**

This is a requirement of feasibility consistent with Federal Regulations. At least one receptor must receive an insertion loss of 8 dBA for the particular barrier system to be considered feasible from a noise reduction standpoint. If you cannot meet this criterion, the system is unfeasible. However, it is unusual not to get at least one receptor with an 8 dBA insertion loss. This usually occurs near the center of the barrier system.

**C. Drainage**

Drainage is a major issue in Louisiana. It is a major concern of the public when constructing barriers. The appropriate drainage must be provided and considered in the feasibility analyses. Some drainage considerations may call for openings in a barrier system. However, if these openings are frequent or large, they can impede the barrier's ability to reduce noise. Other drainage systems are designed to go under the barrier. This factor should be addressed during preliminary and final project design and should usually be resolved through use of good design practices.

**D. Safety**

Safety is another important consideration. If the barrier is outside the clear zone, safety is not considered a problem. However, if the barrier is within the clear zone, some type of protection is required, such as a concrete barrier rail or guardrail. This factor should be addressed during preliminary and final project design and should usually be resolved through use of good design practices.



E. Access

Access to the abatement system may be necessary for emergency personnel. For lengthy barriers, this may entail leaving an opening or providing a door or small hatchway for fire hoses, etc. Again, any opening in a barrier system reduces its effectiveness to reduce noise. Often this can be overcome with overlaps, flaps, or doors. Noise barriers on non-control of access facilities with numerous access points (driveways, intersections, etc.) are not likely to be feasible because of the required openings in the barrier system.

F. Maintenance

Maintenance is an issue mainly for our District personnel responsible for the maintenance of the system once constructed. Cost, accessibility, safety, replacement materials, etc., all play a role in deciding whether maintenance of a system is feasible. The District should be consulted early on in the process to ensure that a system is feasible from a maintenance standpoint. This factor should be addressed during preliminary and final project design and should usually be resolved through use of good design practices.

**Reasonableness Considerations**

A. Cost of Noise Abatement per Receptor Receiving 5 dBA Insertion Loss

The estimated costs of the construction of noise barriers should be uniformly applied statewide. The cost estimate currently in use for the state is \$25 per square foot for ground-mounted barriers, \$19 per square foot for 10 ft high structural noise barriers mounted behind the concrete barrier rail, and \$21 per square foot for 10 ft high (includes height of the concrete barrier rail) mounted on top of the concrete barrier rail. The \$19 per square foot cost is applied regardless of whether the noise barrier extends below the concrete barrier rail.

B. Public Support:

a. General Public

This criterion takes into consideration the views of the public as a whole. It is not limited to just the people living or working near the abatement measure.

b. Adjacent Owners

This criterion looks only at the adjacent owners, directly affected by the barrier or other abatement measure.

C. Amount of Development Predating Original Highway Construction

This criterion examines the land use of the area prior to the initial construction of the roadway. The amount and type of development is taken into consideration. A rule of thumb is to look within 500 feet of both sides of the roadway for development at the time the road was initially constructed. Compare the development that was there at the time of initial construction to the development currently along the facility. For instance, 10 residences existed when the road was built. Since then, an additional 80 residences were constructed. Let's say 7 of the original homes are still in existence; the amount of development predating original construction would be computed as  $\left[\frac{7}{(80+7)}\right] \times 100 = 8\%$

D. Longevity of Noise Impacts

This criterion examines the land use of the area since the highway was constructed. Traffic noise increases with normal traffic growth. Hence, older developments along the highway have experienced noise impacts longer than more recent developments. (The noise from the highway was not as loud many years ago when the older development was first constructed.) So, older developments are given more weight under this criterion. To compute this criterion, look at the average age of the development along the roadway. Again, look at an area that extends roughly 500 feet from both sides of the road.

E. Effect on Natural/Human Environment

A noise barrier is a mitigation item. It should have no more than moderate to negligible impact on either the human or natural environment. All barriers will have some effect. For example a barrier blocks view, wind and light on adjacent properties. These effects are usually minor when compared to the effect of noise. However, there may be instances when the effect of a barrier is severe or detrimental. This criterion allows for these types of considerations.

F. Zoning Changes towards Less Sensitive Land Use within 300 feet of Right-of-Way

This criterion is dependent on local rules and ordinances. Department encourages compatible zoning, but the Department cannot control local land uses beyond controlling or limiting access to State owned highways. The local rules and ordinances must be consulted to answer this criterion.



## G. Ambient Noise

This criterion takes into consideration the effect of the ambient or background noise level. If the ambient noise level is less than the traffic noise level by 15 dBA, the ambient noise level will have no effect on the abatement measure's ability to achieve the required insertion loss. In this case, traffic is the major noise source, and abatement will achieve a noticeable reduction in the overall noise at the receptor. However, if the ambient noise level is 0-14 dBA less than the traffic noise level, the ambient noise level becomes a major factor in the overall noise level at the receptor. In this situation, both the traffic and ambient sources are contributing to the overall noise level, in which case abating traffic noise may or may not noticeably reduce the overall noise level at the receptor.

The Department has no control over ambient noise levels, so when the ambient noise level is greater than the traffic noise level, noise abatement is not considered reasonable.

## H. Other Noise Sources

The extent and frequency of occurrences should be reviewed when considering other sources of noise. Each situation will be different and should be reviewed on a project specific basis.

### a. Major Airport

This requires examining whether the barrier or abatement consideration is affected by the noise of a major airport, in particular, noise from the flight path of take-offs and landings. To measure this criterion, the runway centerline is extended for 4 miles. Development within 500 feet of both sides of this extension is considered (basically a 1000 ft corridor).

### b. Rail Trunk Line

This criterion takes into consideration the existence of noise from an existing rail line.

### c. Arterial Highway

This criterion takes into consideration noise from existing arterial highway other than the project being evaluated.

## I. Future Build - DOTD NAC

The predicted noise levels from the proposed project are compared to the Department's Noise Abatement Criteria (NAC). This allows for the consideration of the extent noise levels exceed the criteria used to define a noise impact.

J. Future Build - Existing

The predicted noise levels from the proposed project are compared to the existing noise levels. This comparison shows the predicted increase in noise that will occur over existing levels.

K. Future Build - Future No-Build

This criterion demonstrates the expected increase in noise caused by the project. The future no-build levels take into consideration the growth in traffic that is expected if the project is not built.